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more distinctly, the snow-clad summits of the distant land in the northwest, above the ice horizon.

"My heart leaped the intervening miles of ice as I looked longingly at this land, and in fancy I trod its shores and climbed its summits, even though I knew that that pleasure could only be for another in another season."

Of the northern, western and southern extensions of Crocker Land we know nothing, and, as far as any one can say at present, it may cover a considerable area. At any rate, its discovery is a direct proof in favour of Mr. Harris' theory, and against Dr. Nansen's theory. But the first traveller who explores Crocker Land will, perhaps, completely change all present notions on the unknown Arctic.

GEOGRAPHICAL RECORD.

AFRICA.

Agricultural Development in Rhodesia.—We have received from the Rhodesian Agricultural Union a report of the *Proceedings* of the Third Annual Farmers' Congress, held at Gwelo in June last year. It appears from Mr. G. M. Odlum's paper on "The Status of Rhodesian Agriculture" that the pioneers, sixteen years ago, did not think of tilling the soil, but sought only for minerals. Many did not find the wealth they were seeking, and some tried to earn a living by farming. Their experiences did not encourage others to settle on the land. Cattle died mysteriously, crops failed, markets were limited, transportation was dear, and the cost of machinery was excessive. But gradually men learned how to conduct farming, railroads came in, and cattle increased rapidly.

The period of pure experimentation has ended, and the opinion is now general that no other enterprise in Rhodesia will yield so good a return as a properly-developed farm. There are now about 1,000 farmers, only about 1½ per cent. of whom have failed to establish themselves on a basis of complete self-support and the gradual accumulation of a small capital. About 48,000,000 acres are said to be available for agriculture or stock-raising.

Much of this region is nearer the Equator than the south end of Florida. The high elevation of the plateau above the sea, thus ameliorating the climatic conditions, is the chief geographical factor in fitting the land for occupancy by white farmers.

Forecasting the Nile Floods.—In his *Report* on the work of the Survey Department, Egypt, in 1906, Captain H. G. Lyons, Director General, says that, from February onwards, telegraphic reports of the rainfall were obtained from British Central Africa, German East Africa, British East Africa and Uganda, as well as from Mauritius, in order to trace the gradual advance of the monsoon rains. By means of these data and other meteorological information, collected in Egypt and the Sudan, and that which was supplied by the Meteorological Department of India, it was possible to prepare monthly forecasts of the Nile floods which corresponded closely with its actual development. Information was also periodically telegraphed to India for use there in preparing forecasts. Captain Lyons proposes to advance another step in the investigation of the East African monsoon by obtaining kite records of the conditions of the upper strata over the southern Sudan during the rainy season.

RUBBER IN FRENCH WEST AFRICA.—The annual report of the British Consul at Dakar gives particulars of the steps which are being taken by the French Government in French West Africa to safeguard and develop the rubber resources of the country. A special survey is being made of the chief rubber-producing districts; and when the investigations have been completed the worst districts will be closed to rubber collection, so that the plants may have time to recuperate. It is expected that a beginning in this direction will be made in 1908. For the purpose of stocking plantations with rubber-producing trees, a credit of $15,000 has been provided for the present year, with which sum it is expected that a large number of trees will be planted, in addition to nursery plantations for succeeding years. The intention is to set apart from $24,000 to $30,000 each year for this purpose.

CAPTAIN ARNAUD'S LONG AFRICAN JOURNEY.—Captain Arnaud of the French army has recently crossed, in 127 days, not only the Sahara but also the western extremity of Africa. *La Géographie* (No. 3, 1907) says that on March 18th last he and Lieutenant Cortier left Insalah, and on April 28th they reached Timiauin, in the territory of the Iforas-Tuareg, where they met, by previous arrangement, a military detachment under Captains Pasquier and Cauvin that had come from Gao on the Niger. After fourteen days at Timiauin, Captains Arnaud and Pasquier started south and reached Gao on May 22d. From this point Arnaud ascended the Niger and finally reached the coast of Dahomey on July 15. His entire route was 5,200 kilometers long, of which 1,200 kilometers were through unexplored territory.

FROBENIUS RETURNS TO AFRICA.—Mr. Leo Frobenius, the German ethnologist and explorer, whose researches along the Kasai River in 1904-6 are well known, has returned to inner Africa, to make further investigations. He is accompanied by Dr. Hugershoff as surveyor and geologist and Fritz Nansen as cartographer and photographer. The party will study, for a year, the little-known region to the south of the great Niger bend. Another year will be spent along the lower Niger, and, if the health and resources of the expedition permit, similar investigations may be extended to Togo and the Cameroons.

AMERICA.

IRON ORE RESERVES OF THE UNITED STATES.—About two years ago a Swedish geologist prepared a report on the iron reserves of the world in which he said that, at the present rate of consumption in the United States, this country was likely to run short of iron within the present century. This subject is discussed by Mr. Edwin C. Eckel, of the United States Geological Survey, in an advance chapter from "Mineral Resources of the United States, 1906." Mr. Eckel says, in brief, that the possibilities of error are enormous in estimates covering the total iron ore reserves in a vast area like that of the United States. The Lake Superior district, the leading American producer, will probably be called upon to ship over 50,000,000 tons of ore a year befor 1915, in which case the known Lake Superior ores can hardly be expected to last beyond the year 1950; but it is equally obvious that long before that date the value of good workable deposits of iron ore, both there and elsewhere in the United States, will have increased immensely.

Some large iron ore deposits are known in the Rocky Mountain and Pacific States, and others are reported; but it is impossible to estimate the total tonnage. It is probable that the magnetic iron ores in New York, New Jersey, and Pennsylvania will yield quantities far in excess of anything heretofore considered possible in those States. The Geological Survey, however, has studied the southern ores so extensively as to secure a fairly safe basis for tonnage estimate. The total estimated reserve for the red and brown ores of Alabama, Georgia, Tennessee, and Virginia is 2,500,000,000 tons, and the Survey assumes that the total southern ore reserve amounts to very nearly 10,000,000,000 tons, or five times that now credited to the Lake Superior region. In place of the 1,100,000,000 tons credited by the Swedish geologist, Mr. Eckel says it is probably safe to say that the United States have from eight to twenty times that reserve of iron ore.

PROF. GOELDI'S ALBUM OF AMAZON BIRDS.—The Society has received from the Museu Goeldi (Museu Paraense de Historia Natural e Ethnographica) the third and concluding instalment of Prof. Emilio A. Goeldi's "Album de Aves Amazonicas." The first instalment appeared in 1900. The completed Album forms a beautiful supplement to Dr. Goeldi's great work on the Birds of Brazil, published between 1894 and 1900. The album contains 48 plates (each 9½ by 12 inches), of which the concluding instalment contains 24 plates. The plates are superior lithographs, showing eight to ten birds on each sheet, grouped in their natural orders, with a background of vegetation illustrating their environment. The Museum and Professor Goeldi are to be congratulated upon the completion of this valuable work.

THE ABANDONED SHORE-LINES OF EASTERN WISCONSIN.—The late glacial and post-glacial history of the Great Lakes has been more thoroughly and accurately pursued in recent years than ever before. Some parts of the region have been studied with special care, and a contribution to this subject has just been made by James W. Goldthwait, assistant professor of geology at Northwestern University. His monograph, with the above title, is published as *Bulletin* No. 17 of the Wisconsin Geological and Natural History Survey. The writer gives a résumé of the development of the extinct lakes of the Great Lake region and of the changes in them while the ice-sheet was disappearing. Previous studies of the extinct lakes Algonquin, Nipissing, and Chicago are then reviewed, and attention is called to problems concerning their history, some of which are not yet solved. Most of the report describes the abandoned shore-lines of eastern Wisconsin, and gives in full the results of instrumental measurements of altitude. Especial features of the work are the large amount of data collected within a comparatively small district and the accuracy of the measurements—the Y level having been used rather than the aneroid or the hand level. The book has 134 pp., a good index, and is illustrated with many photographs and diagrams.

DIAMONDS IN PLACE IN THE UNITED STATES.—Diamonds have been found in about thirty localities in this country, but the only region where they have been found in the place in which they originated has recently been discovered. Mr. George F. Kunz, the gem expert, and Dr. S. H. Washington, petrographer, have examined the find. The diamonds occur in an igneous rock, similar to that of South African mines, near Murfreesboro, Pike County, Arkansas. Two stones were picked up on Aug. 1, 1906, and at last reports the total number found was 130. Many are white and of good water, others are yellow, and some are of brown bort. The two largest stones weigh six and one-half carats, one being very fine white and the other brown. They are found on the surface as well as within the greenish, friable, decomposed peridotite, a rock resembling the famous blue ground of Kimberley. The property is being developed.

NEW MOUNTAINEERING JOURNAL.—The latest periodical in this line is *The Mountaineer,* a quarterly, issued in the interest of journeys afield, high ascents, and the study of mountains. It is published by the Seattle Mountaineers' Club at $1 a year. The editor is Mr. E. L. Hampton. The first number, issued in March last, gave details of the organization of the Seattle Mountaineers' Club, general articles, including "The Mountains of Washington," by W. D. Lyman, and "Birds of the High Cascades," by William M. Dawson, and the plans of the Outing Committee for the first annual expedition of the Club. A large part of the June number is devoted to articles on the Olympic Mountains and the arrangements for the club expedition to the Olympics late in July. The magazine is excellently illustrated with photographs.

RAINFALL IN THE LAKE REGION.—A study of the average annual precipitation in the Lake region, by Professor Alfred J. Henry, of the United States Weather Bureau, appears in the *Meteorological Chart of the Great Lakes,* No. 1, 1907, and is illustrated by a chart. A previous computation of the annual precipitation in the Lake region was made by the same writer in 1899, and published in the *Meteorological Chart of the Great Lakes* for that year. Measurements of rain and snow have now been made for a period of thirty-six years (1871-1906) at 21 stations, which are considered as the standard stations, and the period 1871-1906 is taken as the fundamental period. The total number of stations used in determining the mean values and constructing the chart was 107, all but 7 of which had more than ten years' observations. The records of ten years and over were generally reduced to the fundamental period. The total amount of rain and melted snow is in general about 31 inches. The increase in precipitation due to the presence of the Great Lakes is probably not more than 2 or 3 inches annually. In 1894 Professor Harrington pointed out that areas of increased rainfall were generally southeast of the Lakes, and suggested as a probable cause the chilling of the air in its passage across the water. More recently Professor M. S. W. Jefferson has shown that the "islands" of heavier rainfall are areas of greater altitude, and that the increased elevation will account for the heavier rainfall. It is too early, as yet, to draw any conclusions as to possible secular variation of rainfall in the Lake Region. R. DEC. W.

A CAVE IN CALIFORNIA.—A large and remarkable cave was, according to the *Scientific American,* recently discovered in the Santa Susana Mountains, some fifty miles from Los Angeles, Cal. The cave contains many halls, some of very large extent, and the walls of one are covered with rude drawings, some of which are almost obliterated, but others are quite clear. The drawings represent incidents of the chase, showing Indians on foot pursuing bear, deer, and other animals. One wall drawing shows the bear pursuing the hunter. The work is executed in soft red stone.

CANADIAN FARM LANDS DESCRIBED.—The Report of the Surveyor-General of Dominion lands for the year ending June 30, 1906, gives 137 pages to concise descriptions of the townships that were surveyed during the fiscal year. Similar information is given in every annual *Report,* and it must be of considerable service to immigrants seeking new farms and to others interested in Western lands. The description of each township includes the means of communication by which it is reached, the quality of the soil, the crops for which it is most suitable, the nature of the surface, whether level, rolling, or swampy, the amount of timber, if any, the quality and quantity of water and also of wild grasses, and data concerning temperature, game, minerals, etc.

NEWFOUNDLAND FISHERIES.—In the report on the fishing industry of Newfoundland, prepared by the assistant collector of customs at St. John's (Board of Trade *Journal,* No. 558, pp. 267-9), the fisheries are divided into the Shore, Labrador, Strait and Gulf, and the Banks. The Shore fishery is carried on in the bays and along the coast only a few miles from the shore, the fish being captured by hook and line, cod nets, cod traps, and seines. The Labrador fishery employs about 20,000 Newfoundlanders, who visit that coast from June 1 to October 1, some carrying on the cod fishery at regular stations on the coast and the larger number following the fish wherever it is found. These fishermen, known as floaters, live on their fishing schooners (from 18 to 70 tons) and set their traps in or about harbours where they find the fish.

The Strait and Gulf fishery is carried on in the same manner as the Labrador fishery. Only 97 vessels, carrying 1,378 men, are engaged in Bank fishery, which was once the most prominent of the Newfoundland fisheries. On the Banks bultows are used. They are long lines of hooks which are baited and set on the grounds. The vessel being anchored, the bultows are set out by the fishermen, who use small, flat-bottomed boats called dories. The fish, when caught, are brought on board, split, washed, and salted, and stowed in the hold. When bait is exhausted or a full cargo secured, the vessel comes to the shore, discharges, and again sails.

JAMAICA NEGROES AND CLIMATE.—An instructive article on "The West Indian and American Negro: a Contrast," by W. P. Livingstone, in the *North American Review* for July 19, 1907, brings out clearly the importance of the climatic factor in the present status of the negro in Jamaica and in the United States. To quote:

> It is necessary . . . to point out that the position of the white in America is more difficult in some respects than that of the white in the West Indies. That there is less hostility to the blacks in the latter sphere is not to be attributed altogether to the higher ethical principles dominating the actions of the British. Much is due to geographical conditions. The West Indian negroes are far distant from the main body of British whites, and neither comes into direct contact and competition with the other. Compared with the great masses of colored inhabitants, the white residents in the islands are a mere handful. The former do not claim equality, and they accept whatever social honor the whites voluntarily grant them. Fundamental race antipathy exists there as elsewhere, but it is not accompanied by friction, because the political and social contact is not sufficiently close and the climate prevents anything like economic competition. But, if the proportions of the population were equalized and the climate more adapted for white men, as in the United States, we should find a different state of things. Despite altruistic considerations, the whites would probably be much less tolerant of the negro and more averse to his social advancement.

R. DEC. W.

TIDE TABLES FOR THE PACIFIC COAST OF CANADA.—The latest issue of these Tide Tables, prepared by the Tidal and Current Survey in the Canadian Department of Marine and Fisheries, is for the year 1908. The tables include Fuca

Strait, the Strait of Georgia, and the Northern Coast. These tables are based upon observations of the tides, obtained from self-registering tide gauges, which are kept in continuous operation, day and night, throughout the year. This record is reduced by the latest methods of analysis by which the Tidal Constants are arrived at; and from these the tide tables are calculated.

ASIA.

SVEN HEDIN'S JOURNEY THROUGH TIBET.—The Allahabad *Pioneer* has published a long letter from Dr. Sven Hedin, dated Mansarowar Lake, July 25, in which he makes an outline report of his journey from Shigatse to Tok-chen on that lake. The journey has been richer in results than his previous one from the Aksai Chin south-east across Tibet to Shigatse, as he was almost the whole time in inhabited country. These results include 203 sheets of maps, 410 specimens of rock in connection with geological profiles, 700 panoramas, 26 astronomical points, the meteorological journal continued three times a day, detailed measurements of the volume of water at every river crossing, a collection of plants and a great number of sketches.

The contributions to physical geography and hydrography include the measurement of the large lake Amtchok-Tso, of which an isobathic map was made, the measurement of the height of many peaks and passes, and the correction of existing maps in a number of important particulars. He avoided, as far as he could, the routes through this region of Major Ryder and Captain Rawling, and says that whenever he came in contact with their map he was "filled with admiration for the excellent work they had done." Following the northern bank of the Tsan-po (Brahmaputra) and then the Ragha-Tsanpo, a northern tributary, he crossed the gigantic mountain range which is the water-parting between the Brahmaputra and the lakes without outlet in the heart of Tibet. He travelled to the southwest to the source of Ragha-Tsanpo and found that the map of this region is nothing like the reality. Dr. Hedin says that he received all over the country the greatest hospitality and kindness from both Tibetan officials and nomads. His explorations extended west of Shigatse over 400 miles.

DEVELOPMENT OF SUMATRA.—The Government of the Netherlands has begun the preliminary work for a railroad that is to extend nearly the entire length of Sumatra. Early in July several engineers were sent to the island to survey the route for a line between Medan at the foot of the mountains in the northeast part and Palembang in the south of Sumatra. The distance between the terminal points is about 630 miles in a straight line. A number of branches will connect the main line with ports along the coast. The sum of 50,000 gulden was appropriated for the preliminary survey. The *Ostasiatische Lloyd* (No. 32) says that the proposed railroad will be of the greatest importance in the development of Sumatra. Owing to lack of such facilities, by far the greater part of the island, rich in minerals and agricultural possibilities, has been almost useless.

METEOROLOGICAL STATIONS IN ANATOLIA AND MESOPOTAMIA.—Dr. Hugo Grothe, of Munich, has established a series of meteorological stations extending through western Anatolia and Mesopotamia. It is expected that they will supply information which is much desired concerning the meteorological conditions of the high plateau and mountain land of the Taurus system and of the plateau and steppes as well as the alluvial region of the Euphrates and Tigris. The stations are at

Marash, Urfa, Mesereh, near Kharkut; Kalat Shergat, and Babylon. A number of Government bureaux and scientific societies in Germany will bear the expense of maintaining these stations.

AUSTRALIA.

THE MURRAY BASIN IN AUSTRALIA.—The River Murray League of South Australia was organized on the idea that a complete system of locks and storage basins should be built to provide permanent navigation in the Murray River and its large tributaries, the Darling and Murrumbidgee Rivers, and insure an ample supply of water to meet all the requirements of irrigation. The League has published, under the title of "The Nile of Australia," a series of forceful articles, written by David J. Gordon, which appeared in various newspapers and did much to emphasize the importance of the policy which the League is promoting. Mr. Gordon tells in a very interesting manner of the discovery of the Murray River by Sturt and the service this river has rendered to the settlers. The author regards the question of river management as the greatest in Australia, and endeavours to show that for an outlay of about $15,000,000 these rivers can be locked for a distance of 3,000 miles and permanent waterways assured.

EUROPE.

EROSION ON THE BRITISH COAST.—The Royal Commission on Coast Erosion has been taking testimony in London after visiting various parts of the coast. At one of the meetings, Sir F. Dixon-Hartland, M.P., said that between Middleton and Bognor the tide swept around from Selsey Bill and it was difficult to protect any part of that coast. He had spent $10,000 on groins and had lost two acres of land. The parish church had been submerged and it had been necessary to build a new church. The Duke of Richmond's land, adjoining, was still being eroded. Even when groins had been laid at a depth of 14 feet the sea undermined them and they were swept away. It was cheaper to let the farming land go than to spend money trying to save it. The urban districts were generally able to take care of their coasts and the obligation of the Government to assist should be confined to rural districts and poor ports. Another witness expressed a fear lest the Isle of Wight should be cut in two by encroachments of the sea.

BRIGHT SUNSHINE IN THE BRITISH ISLES.—"The Distribution of Bright Sunshine over the British Isles" is discussed by Richard H. Curtis in *Symons's Meteorological Magazine* for September, 1907, and the article is accompanied by a chart showing the average annual duration of sunshine. The records used in the preparation of this chart are those of the burning recorder. A few records exceed twenty-five years, and series for shorter periods are available for a large number of stations. The shorter series have been weighted for the length of period they cover. The number of hours of bright sunshine is indicated by "isohels." The sunniest parts of the United Kingdom are the most southern, the annual total of hours' duration decreasing northward, from 1,900 hours in the Channel Islands to only 1,200 hours over the north of Scotland. The lines of equal duration show a strong tendency to follow the lines of the coast both in the east and the west, and this feature is well shown by the stations adjacent to St. George's Channel. A large part of the central area of England, and of the southwest of Scotland, is adversely influenced by the smoke and dust of the large manufacturing centres. The map is, however, too small to show the details of this effect. May and June are the sunniest months, and December is almost everywhere the least sunny. In winter, the largest totals of sunshine are obtained in the rainy southwest, and at that time of the year the effect of the smoke from the towns is felt more severely than at any other season.

It may be worth noting, in connection with Curtis's new map of sunshine, that in 1891 the London Meteorological Office published Dr. R. H. Scott's "Ten Years' Sunshine in the British Isles." Dr. H. N. Dickson drew the first sunshine map for the British Isles from the data in this paper (*Scot. Geogr. Mag.*, IX., 1893). The *Atlas of Meteorology* (Pl. 18) reproduces Dr. Dickson's map.

R. DEC. W.

WEATHER AND CROPS IN ENGLAND.—*Nature*, Vol. 75, 1907, pp. 545-547, contains an abstract of a recent report by R. H. Hooker on the correlation between the weather and the crops in eight of the eastern counties of England. It appears that the autumn rainfall is more important for wheat than that for any other period. For barley the chief requirement seems to be a cool summer; and the same is true for oats, although the latter also need rain in spring. One general conclusion is reached—viz., the advantage of cool weather during late spring and summer for all crops except, possibly, potatoes. This seems to indicate that grain and roots give the best crops if developed gradually and uniformly. Neither heat nor rains are good for crops for some time before harvest. The condition of the seed sown is seen to be as important as the subsequent weather. The seed being dependent on the weather of the preceding year, there is a relation between the crops of one year and the weather of the preceding year. Curiously enough, the meteorological conditions for the best seeds are apparently somewhat opposed to those necessary for a bulky crop. Thus there is some explanation of the tendency to an alternation of good and bad cereal crops.

R. DEC. W.

WEATHER AND RAILROADS.—The *Quarterly Journal of the Royal Meteorological Society* for July, 1907, makes mention of two recent cases of a marked effect of special weather conditions upon railroad operation in England. On February 20, 1907, the London and Northwestern Railway had the greatest difficulty in maintaining its train service on the North Wales coast during a severe gale. The Irish boat train express from London to Holyhead, drawn by two locomotives, could not take water from the pick-up water troughs because the wind had blown the water out of them. In consequence, the train had to stop for water at a station. The 2.55 train from Chester, westward, was brought to an absolute standstill at Abergale. Between the strongest gusts of wind some progress could be made, but even then the speed was reduced to four miles an hour.

On March 26, 1907, a passenger train left the rails near Felling, on the North-Eastern Railway. Eight passengers were injured, and two of them subsequently died. The accident occurred at 1.45 P.M., on a hot, sunny day, and the Board of Trade report holds that there can be no doubt that the derailment was caused by a sharp kink being forced in the track, owing to the expansion of the rails, due to an unusually hot sun for the season of the year, probably aided by the position of the line in a deep cut. The nuts on the bolts of the fish-plates were all screwed up tight, as is the custom in the winter, and these were not slackened off; nor did the plate-layers go along this length of line in the middle of the day, as they do in the hot months of the year. The report states that the derailment was purely accidental, being due to abnormal temperature and conditions for the time of year, which could not reasonably be expected by the men in charge of this particular section. R. DEC. W.

GEOLOGICAL SURVEY OF IRELAND.—The Sixth Annual Report of the Department of Agriculture for Ireland for 1905-6 says that the Geological Survey was engaged during the year in completing the map and memoir of the country round Limerick showing superficial deposits, and was preparing a similar map of the Londonderry district.

THE PORT AND COMMERCE OF SAINT-NAZAIRE.—The Society has received from the Société de Géographie Commerciale, of that city, an attractive volume giving the history of the development of the port and an account of its present great industrial and commercial interests, together with striking picures and a map in colours, showing the port as it is to-day. The volume was prepared in honour of the great improvements in the port recently completed, and it seems to mark the beginning of a new era of prosperity for Saint-Nazaire. Attention is drawn to the fact that fifty years ago the port was nothing more than a shelter for pilot boats, while to-day more than a million tons of merchandise are handled on its docks every year. No other port of France has sprung into so great importance in so short a time.

THE ALPS AS A WEATHER DIVIDE.—The Alps as a Weather Divide have attracted some attention on the Continent. We may accordingly put on record a recent experience when entering the St. Gothard tunnel on the south side in brilliant sunshine under a cloudless sky. We emerged in thirteen minutes on the north side in a fog so dense that it was difficult to believe we had left the tunnel. The fog diminished as we descended, but the evening was dull and gloomy all the way to Bâle.—(*Symons's Meteorological Magazine,* October, 1907.)

PENINSULA OF QUIBERON.—*Bulletin* 92 of l'Institut Océanographique is given to a paper by Prof. L. Joubin in which he expresses the opinion that this peninsula (coast of Brittany) will in time entirely disappear under the assaults of Atlantic storms. The peninsula is only nine miles long and less than two miles broad at its widest part, and about half way of its length its width has been reduced to a few rods over which the railroad passes. In this place waters from the Atlantic dash over the trains and fall into the bay on the other side. The waves are incessantly undermining the base of the sea front, and the upper rocks, thus undermined, are dropping into the sea. The east side shows a strong contrast; for it is a gentle slope, washed by the warm waters of the bay of Quiberon. All the settlements now stand on the eastern side, and there is a sharp contrast between the forms of life on the two sides. Only animals and plants that thrive in the salt water or the air of the sea are found in the western part of the peninsula, but there is not a trace of this marine life on the east side. The grasses of the mainland grow in the east, but only salt grasses thrive in the west. The waters of Quiberon bay under the lee of the peninsula are smooth and quiet, but it is impossible, even in the calmest weather, to skirt the Atlantic side in a boat.

THE GEOGRAPHICAL CONGRESS AT NUREMBERG.—An American who improved an opportunity to attend this Congress writes that there were hardly any foreigners among the 275 members present:

> The meeting impressed me profoundly as an object lesson showing the true dignity of geography

when it receives its proper treatment as a science. The broad conception of its scope was evidenced by the great variety of topics presented and yet there was no danger of lack of unity in the point of view of the speakers, because they all had university training in geography as an independent science.

POLAR.

ARCTIC CRUISE OF THE DUKE OF ORLEANS.—The Duke of Orleans made a cruise last summer in the Kara Sea and along the coasts of Novaya Zemlia. Commandant Gerlache commanded his vessel, the *Belgica,* and had charge of the oceanographic studies. The other members of the scientific staff were Lieut. Bergendahl, cartography; Lieut. Rachlen, magnetic observations; Mr. Stappers, biology; and Dr. Récamier. Heavy ice made the campaign very difficult, and the expedition was sometimes in peril. A letter from Dr. Récamier published in *La Géographie* (No. 3, 1907) sums up the expedition.

On July 14 the vessel entered the Matochkin Shar and reached the Kara Sea without great difficulty. Although the sea was covered with ice, the *Belgica* was able to force her way south along the east coast of Novaya Zemlia. After three days a northeast wind drove the ice around the ship, and she was a prisoner. This wind persisted for five weeks, and the *Belgica* throughout was fast in the ice, was often under great pressure, and drifted first to the southeast and then to the southwest. She was finally forced out of the Kara Sea through Kara Strait, and the expedition found itself, wholly against its will, in Barents Sea.

Here the ice was as heavy as in the Kara Sea, and it was not until August 21 that the vessel reached free water off the coast of Gooseland in the southwestern part of Novaya Zemlia.

An attempt was then made to go north, with a view to doubling the north end of Novaya Zemlia. Unfortunately, the vessel ran on a rock in Gribovaya Bay and sixty tons of coal were thrown overboard, but finally, with the aid of the tide, she floated again. At last she reached the northern end of Novaya Zemlia, and then pushing westward towards Franz Josef Land, entered a belt of ice. It was decided, however, to retreat, as coal for only twenty days remained.

The scientific results were important. During the drift in the Kara Sea the net was constantly in use, and the collections will add to our knowledge of the marine fauna in this part of the Arctic. Commandant de Gerlache made a number of thermometrical soundings and took specimens of water at different depths.

The configuration of the submarine valley along the east coast of Novaya Zemlia, which Nordenskiöld discovered in the Kara Sea, was determined. The valley extends parallel to the coast and about twelve miles from it. The *Belgica* followed it between 72° and 70° N. Lat. Its depth varies between 150 and 300 meters, the depression being generally about 150 meters below the adjoining sea-floor. The water in this trough as Kara Strait was approached was found to be relatively warm. The geographical studies of the extreme northern part of Novaya Zemlia show that this region is very badly mapped.

CAPTAIN BERNIER'S CRUISE IN THE ARCTIC.—The Canadian steamer *Arctic,* formerly the German steamer *Gauss,* reached Quebec in October after a fifteen months' voyage in the Arctic Seas. The vessel, under the command of Capt. Bernier, left Quebec in July, 1906, and planted the British flag on Melville and Bryan islands, Martinland, and Bathurst, Somerset, Coburg, and North Lincoln islands. Capt. Bernier has brought back records of the territories annexed and documents left by Sverdrup, Peary, and McClure were found and brought down. The *Arctic* wintered in Ponds Inlet.

DR. BRUCE'S EXPEDITION TO PRINCE CHARLES FORELAND.—The *Geographical Journal* (Nov., 1907) gives particulars of the work accomplished last summer in this region by the Scottish expedition under Dr. W. S. Bruce. In 1906, Dr. Bruce and the Prince of Monaco landed on the northeast shore of this island and surveyed a considerable part of it. In continuing the work this year, Dr. Bruce, in June, established a base camp on the southwest coast and spent several weeks surveying the neighbouring country. Weather conditions prevented an attempt to round the northern end of the island and return south along the east coast.

The two years' work in the Foreland has resulted in a detailed chart of the whole of the west coast on a scale of two inches to the mile; the mountainous interior has been similarly surveyed and a considerable portion of the east coast. Specimens of rocks and fossils, some of the latter, apparently, dating back before the Tertiary Age, promise to throw light on the geological history and formation of the island. Large collections of plants and birds were made, including some species not previously known to exist in the Spitzbergen group.

Dr. Bruce says that Prince Charles Foreland, with an average length of fifty-five miles and a breadth of six miles, may be divided into three regions: hilly country, extending for five or six miles from the southern extremity; next, low-lying land, nowhere more than sixty feet above sea-level, extending for fourteen miles; then the northern two-thirds of the island, comprising an almost continuous range of mountains, the highest peaks of which rise to nearly 4,000 feet. The mountains are much glaciated, some of the glaciers descending to the sea-level on the east coast. There is an extensive series of terraced beaches between the foot of the mountains and the sea.

THE AREA OF GREENLAND.—This has been calculated by Mr. H. Prytz, who gives the result in No. 33 of the *Meddelelser om Gronland.* His calculations give the area as 826,500 square miles, that of the ice-sheet at 712,750 square miles, while the settled districts of the west coast occupy 43,130 square miles.

THE DANISH SCIENTIFIC STATION IN GREENLAND.—Mr. M. P. Porsild, the director of this station on Disco Island, West Greenland, has made his first report, dated March 1 last. It is learned from the summary, which is printed in the *Geog. Zeitschrift* (1907, p. 335), that the station was erected in the fall of 1906 at Angakudsarrik in Österdalen, to the east of Godhavn. The site is naturally well protected from the north winds, and though the snowfall was heavy and the winter was unusually severe, the work of the station was not interrupted. The library of 3,288 volumes was opened at Christmas, and the laboratory was ready for use by February. The work at the station proved to be a godsend to the poor people of Godhavn, for they were able to live on what they earned without receiving the usual relief.

THE PRINCE OF MONACO'S VISIT TO SPITZBERGEN LAST SUMMER.—The Prince of Monaco returned from Spitzbergen at the end of August, having completed the hydrographical work in Cross Bay, which he began last year. He again charted a small steamer, the *Kvedfjord,* on which he had a Norwegian party under Captain Isaachen, who carried out the survey chiefly of the region between

Cross Bay and Magdalena Bay on the northwest coast of West Spitzbergen. The Prince also made a number of investigations of the higher atmosphere by means of kites and balloons. The ice and weather conditions were extremely unfavourable, and forced the expedition to leave Spitzbergen rather earlier than the Prince had intended. Among those who accompanied him, as his scientific staff, were Dr. Jules Richard, Capt. Bourée, Dr. Portier, and Prof. Hergesell.

VARIOUS.

Miss Helen Culver, of Chicago, has endowed the Geographic Society of Chicago with the Helen Culver Gold Medal, to be awarded for eminent service in the geographical sciences. The first award was made to the Norwegian scientist and explorer, Captain Roald Amundsen, upon the occasion of his address before the Society on Nov. 13.

The Thirty-first Annual Report of the Department of Geology and Natural Resources of Indiana is chiefly given to papers of economic importance relating to the petroleum, peat, and iron resources of the State. It is the twelfth of these *Reports,* prepared by W. S. Blatchley, the present State Geologist.

Professor Douglas W. Johnson has resigned his assistant professorship in the Massachusetts Institute of Technology, to accept an appointment as assistant professor of physiography in Harvard University.

Dr. Hiram Bingham has been appointed instructor in South American geography in Yale University.

The name of the British Central Africa Protectorate has been changed to Nyasaland Protectorate.

Among the articles in the annual report of the Smithsonian Institution for 1906 are: The Eruption of Vesuvius in April, 1906, by Prof. A. Lacroix; To the North Magnetic Pole and through the Northwest Passage, by Roald Amundsen; Iceland, its History and Inhabitants, by Jon Stefansson; Quaternary Human Remains in Central Europe, by Hugues Obermaier; The Origin of the Slavs, by Prof. Zaborowski; and National Reclamation of Arid Lands, by C. J. Blanchard.

Captain Johansen, the companion of Dr. Nansen on the journey from the *Fram* across the North Polar Basin, is spending the winter in the northwest of Spitzbergen.

The second part of the Geographisches *Jahrbuch,* Vol. XXIX, 1906, has recently been issued by Justus Perthes, Gotha. The literature of Meteorology for the period 1902-5 is recorded and briefly discussed by Dr. W. Gerbing. Owing to the increasing amount of material, it was possible to print only the titles of some works. Dr. Hermann Haack of Gotha has an exhaustive report on the progress of Cartography, and gives special attention to map-drawing and the cartographic expression of the forms of the earth's surface. The history of Geography is represented by the report of Prof. J. W. Nagl, of Vienna, on the progress of Geographical Nomenclature.

THE AMERICAN GEOGRAPHICAL SOCIETY.—A Regular Meeting was held at Mendelssohn Hall, No. 119 West Fortieth Street, Tuesday, November 26, 1907, at 8.30 o'clock, P. M.

President Huntington in the chair. The following persons, recommended by the Council, were elected to Fellowship:

H. King Sturdee.	Henry Edward Rood.
Joseph Parke Byrne.	V. Stefansson.
George E. Gartland.	Herdman F. Cleland.
Walter R. McDowall.	Thomas D. Leonard.
Charles Gibson Bennett.	

The President then introduced Mr. Ellsworth Huntington, who addressed the Society on a journey Across the Himalaya Mountains to the Unexplored Salt Desert of Lop.

Stereopticon views were shown.

On motion, the Society adjourned.

The Ninth International Geographical Congress.—The Council of the American Geographical Society, at a meeting held November 21, appointed the following Delegates to the Congress to be held in Geneva, July 27-August 6, 1908:

Messrs. Archer M. Huntington, William Libbey, Fordham Morris, A. P. Brigham and E. L. Stevenson.

NEW MAPS.

AFRICA.

Cape of Good Hope.—Geological Map of the Colony of the Cape of Good Hope. (Sheet 46.) Scale, 1:238,000, or 3.7 statute miles to an inch. The Geological Commission, Cape Town, 1907. (Price, 2s. 6d.)

The district whose geology is laid down on this sheet by A. L. du Toit lies west of the Orange River and Transvaal Colonies; from which it extends to 24° E. Long. Its predominant formations are the shales and boulder beds of the Dwika series, with intrusions of diabase surrounding a wide belt of dolorite of Karroo form; and succeeded in the west by the Kaap Plateau, with its dolomite, limestones, and shales of the Transvaal system. A geological section across the map is shown.

Egypt.—Egypt. Scale, 1:50,000, or 0.7 statute mile to an inch. Sheets: I-I, II-II, II-III and IV-III N.E.; XIV-I S.W. Survey Department, Cairo, Egypt.

Hydrography, including the supply and drainage canals, is shown in blue and the roads in brown.

Gold Coast.—Gold Coast. Scale, 1:125,000, or 1.9 statute mile to an inch. Sheets, 72-K-I (Coomassie), 72-K-III (Oboase), 72-L-IV (Komfrodua), 72-R-I (Nsaba), 72-R-II (Accra), 72-W-I (Sekondi). Published under the direction of Major F. G. Guggisberg, R.E., Director of Surveys, London, 1907. Selling agents, W. & A. K. Johnston, Edinburgh and London, and Edward Stanford, London. (Price, 2s. a sheet.)

The publication of this important topographical survey is making rapid progress. Some details concerning the work were given in the *Bulletin* for Oct., 1907 (p. 627). The districts occupied by the numerous gold-mining concessions